

## **REMARKS**

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1, 2 and 6-12 remain pending in this application.

### **Rejection under 35 U.S.C. § 112**

Claims 1, 2, and 6-8 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicant respectfully disagrees that the previously-added “maintaining” limitation lacks written description support. Nevertheless, to advance prosecution (and reserving the right to pursue this limitation subsequently), applicant has amended independent claim 1 to delete the limitation. Withdrawal of this rejection is respectfully requested.

### **Rejections under 35 U.S.C. § 103**

Claims 1, 2, 6, and 7 stand rejected under 35 U.S.C. § 103(a) as unpatentable over JP 04-135704 in view of U.S. Patent No. 4,973,440 (“Tamura et al.”) and U.S. Patent No. 5,202,071 (“Nakamura et al.”). This rejection is respectfully traversed. Applicant submits that the references are not properly combinable and that even if combined they fail to teach or suggest the claimed invention as a whole.

Amended claim 1 recites a method including performing a manufacturing procedure from a mixing of components to a procedure of pressing a molding in a continuous manner of operation; among other limitations, the claim requires “no further maturation process is performed after the endless resin mat is released from the lower and upper belts”.

Applicant's disclosure provides support for the amendment to claim 1. For example, see the specification at paragraphs 0010, 0016, 0017, and 0023. As discussed in the specification, by providing a mat that is fully matured, it is possible to produce moldings in a continuous, direct process without any hold-over for a maturing process.

JP 04-135704 discloses a method of preparing a sheet in which a reinforcing film is supplied to an upper surface of a lower carrier film 3, a resin filler paste 11 is supplied to an upper surface of an upper carrier film 9, a reinforcing filler 6 is supplied to the lower carrier film 3, the films are pressed between rolls, and the films are passed through a temperature control means 16 before being taken up by a taking-up roll 18. See abstract of JP 04-135704. JP 04-135704 further discloses that the material collected on the taking-up roll 18 is subsequently introduced into an aging oven to perform final aging. See abstract of JP 04-135704. Therefore, JP 04-135704 does not disclose or suggest a continuous method for manufacturing fiber-reinforced moldings, "wherein no further maturation process is performed after the endless resin mat is released from the lower and upper belts" because JP 04-135704 discloses that the material is aged after being collected on the taking-up roll 18. Indeed, this reference specifically teaches away from both the "continuous" limitation (that is, continuous from "mixing" to "pressing a molding") and the "no further maturation" limitation.

Tamura et al. discloses a process of producing a fiber-reinforced thermosetting resin molding material in which a liquid resin composition 2 is projected onto films 4a, 4b by rollers 3a, 3b. See Tamura et al. at col. 6, line 50, to col. 7, line 3. Glass fibers are supplied from a supply unit 16 and the films 4a, 4b are advanced to a conveyor unit 14 and then to an impregnating and deaerating unit 15. See Tamura et al. at col. 7, lines 36-49. However, Tamura et al. does not disclose or suggest performing a maturation process by carrying the films through a controlled-temperature, continuous thickening unit. Tamura et al. does not disclose or suggest that the conveyor unit 14 or the impregnating and deaerating unit 15 are temperature controlled to perform a maturation process of the material deposited onto the films 4a, 4b. Furthermore, Tamura et al. does not disclose or suggest a process "wherein no further maturation process is performed after the endless resin mat is released from the lower and upper belts" because Tamura et al. does not disclose or suggest a method that performs

the recited maturation process. Moreover, contrary to claim 1's requirement of a process that is continuous from "mixing" to "pressing a molding," Tamura et al. specifically teaches that its molding material is formed in the shape of a sheet or plate "and then put to storage." Col. 7, lines 48-49.

Nakamura et al. discloses a method of producing fiber reinforced plastic moldings in which resin components are supplied through a die 5 by a screw and onto a mat 6 and films 13, 14. See Nakamura et al. at col. 3, line 50, to col. 4, line 28. The mat 6 is then passed over cooled rolls 9, 10, 11, and 12 before the mat 6 is cut and formed in a press molding machine 17. See Nakamura et al. at col. 4, lines 22-34. Furthermore, Nakamura et al. discloses that molded pieces are cured at a high temperature. See Nakamura et al. at col. 2, lines 58-60; col. 3, lines 14-18. Therefore, Nakamura et al. does not disclose or suggest performing a maturation process by "carrying the endless resin mat in a meander by the lower and upper belts through a controlled-temperature, continuous thickening unit, wherein no further maturation process is performed after the endless resin mat is released from the lower and upper belts."

It would not have been obvious to one of ordinary skill to combine the teachings of JP 04-135704, Tamura et al., and Nakamura et al. to provide the method of claim 1. A basic requirement of a *prima facie* case of obviousness is that a prior art reference, or prior art references when combined, must teach or suggest all the claim limitations. See M.P.E.P. §§ 2143, 2143.03. JP 04-135704, Tamura et al., and Nakamura et al., alone or in combination, do not disclose or suggest all of the features recited in claim 1 because these references do not disclose or suggest (among other things) a maturation process that is performed by "carrying the endless resin mat in a meander by the lower and upper belts through a controlled-temperature, continuous thickening unit, wherein no further maturation process is performed after the endless resin mat is released from the lower and upper belts."

#### Claim 6

Claim 6 depends from claim 1 and is allowable for at least the reasons discussed above. Claim 6 further recites "wherein the continuous thickening unit is enclosed." JP 04-

135704, Tamura et al., and Nakamura et al. fail to disclose or suggest a continuous thickening unit, “wherein the continuous thickening unit is enclosed.”

For at least the reasons discussed above, withdrawal of this rejection is respectfully requested.

Claims 8-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 04-135704, Tamura et al., Nakamura et al., and U.S. Pub. No. 2003/0083423 (hereafter “Wiercinski et al.”). This rejection is respectfully traversed.

Claim 8 depends from claim 1. Wiercinski et al. discloses that sheet molding compound can be coated onto a web, such as a release liner or a belt. See Wiercinski et al. at paragraph 0077. However, Wiercinski et al. does not disclose or suggest a maturation process that is performed by “carrying the endless resin mat in a meander by the lower and upper belts through a controlled-temperature, continuous thickening unit, wherein no further maturation process is performed after the endless resin mat is released from the lower and upper belts.” Therefore, Wiercinski et al. fails to remedy the deficiencies of JP 04-135704, Tamura et al., and Nakamura et al. discussed above in regard to independent claim 1, from which claim 8 depends.

Amended independent claim 9 recites a method for continuously manufacturing fiber-reinforced moldings; among other limitations, the method requires that “each of the lower and upper belts comprise an endless belt that extends from a location where the resin mixture is spread and the fibers are deposited to a location where the endless resin mat is divided.”

Claims 10-12 depend from claim 9.

JP 04-135704 provides endless belts in a conveyor section 12, as shown in Figure 1 of JP 04-135704. However, the endless belts of the conveyor section 12 of JP 04-135704 do not “comprise an endless belt that extends from a location where the resin mixture is spread and the fibers are deposited to a location proximate where the endless resin mat is divided.”

Tamura et al. discloses a conveyor unit 14 and an impregnating and deaerating unit 15. However, as shown in Figure 1 of Tamura et al., neither of these units “comprise an

endless belt that extends from a location where the resin mixture is spread and the fibers are deposited to a location proximate where the endless resin mat is divided.”

Nakamura et al. discloses a belt 8 that extends between rolls 8a and 10, as shown in Figure 1 of Nakamura et al. However, this belt does not “comprise an endless belt that extends from a location where the resin mixture is spread and the fibers are deposited to a location proximate where the endless resin mat is divided.”

As discussed above, Wiercinski et al. discloses that sheet molding compound can be coated onto a web, such as a release liner or a belt. However, Wiercinski et al. does not disclose or suggest the structure for such a belt.

It would not have been obvious to one of ordinary skill to combine the teachings of JP 04-135704, Tamura et al., Nakamura et al., and Wiercinski et al. to provide the method of claim 9. JP 04-135704, Tamura et al., Nakamura et al., and Wiercinski et al., alone or in combination, do not disclose or suggest (among other things) lower and upper belts, “wherein each of the lower and upper belts comprise an endless belt that extends from a location where the resin mixture is spread and the fibers are deposited to a location proximate where the endless resin mat is divided.” Withdrawal of this rejection is respectfully requested.

Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for

such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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